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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/923,263	08/03/2001	Stephen G. Dick	I-2-166.1US	2525

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EXAMINER

CHANG, RICHARD

ART UNIT	PAPER NUMBER
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2663

DATE MAILED: 03/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/923,263	Applicant(s) DICK ET AL.	
	Examiner Richard Chang	Art Unit 2663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 February 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>02/04/2005</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 36-38 are rejected for insufficient antecedent basis.

Claim 36 recites the parent claim as itself in line 1, claim 36. There is insufficient antecedent basis for this limitation in the claim.

Claim 37 recites the parent claim as itself in line 1, claim 37. There is insufficient antecedent basis for this limitation in the claim.

Claim 38 recites the indefinite parent claim 37.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-34 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by US patent No. 6,363,060 ("Sarkar").

Regarding claims 1 and 5, 12,17,21,26 Sarkarr teaches a method and apparatus for cell search related quickly acquiring synchronization of a signal in a WCDMA communication system (a user equipment (UE) and method capable of conducting cell search in a wireless communication system) (See Fig. 2) having a plurality of base stations which each transmit a common primary synchronization code (PSC) in a primary synchronization channel at a different timing (time slot) within a system frame (See Fig. 2, Col. 1, line 62 to Col. 2, line 3), and a broadcast common data (midamble code) in a broadcast channel (See Fig. 2, Col. 1, line 55-58), a transmitted power level of the PSC and the midamble code being at a common fixed ratio for each of said base stations (See Fig. 2, Col. 1, line 55-58), the UE comprising of:

a receiver (204) for receiving said PSCs (See Fig. 6, Col. 13, lines 45-49),

a PSC detector (206, See Fig. 6, signal power measuring device) for measuring the correlation energy (power level) of received PSCs and identifying a frame timing of received PSCs by offset with the greatest correlation energy (which exceed a power threshold) (See Fig. 7, Col. 14, lines 42-49), and

a control processor (212) for analyzing data signals received in the primary synchronization channel associated with the PSC with greatest correlation energy (highest power level) of the received PSCs with predetermined threshold energy (a threshold exceeding power level) and identifying frame timing (synchronizing or maintaining synchronization) with the base station associated with said highest PSC (See Fig. 6, Col. 10, lines 44-48),

wherein said data signals including secondary synchronization codes (SSC) detector (208, See Fig. 6, Col. 15, lines 3-11).

Regarding claims 2 and 6, 9, 13, 18-19, 22, 27, 31 Sarkar further teaches that said signal power measuring device comprises:

a matched filter (310) matched to the common PSC for measuring each PSC received from said plurality of base stations (See Fig. 7, Col. 14, lines 48-49),

an autocorrelation envelope (noise estimator) which determines the autocorrelation energy (noise power) received from each transmission of said plurality of base stations, and

a slot timing decision module (314 as comparator) for determining the predetermined threshold energy (a power threshold) and comparing the correlated energy (said measured power levels) of said received PSC with said threshold and outputting the frame timing of said highest PSC (See Fig. 7, Col. 15, lines 12-17).

Regarding claims 3 and 7, 10, 14-15, 23-24, 28-29, 32-33 Sarkar further teaches that said processor comprises:

a SSC processor (212 and 208) responsive to said frame timing output from said signal power measuring device which detects said secondary synchronization codes (SSC) in said primary synchronization channel to identify the base station associated with the frame timing to extract base station information which includes the pilot information (midamble codes), and

a pilot detector (synchronization processor) responsive to said SSC processor which detects a primary pilot information (scrambling code for midamble) (See Fig. 7, Col. 15, lines 12-17).

Regarding claims 4 and 8, 11, 16, 20, 25, 30, 34 Sarkar further teaches that the base station is of the 3rd generation wideband CDMA operation, inherently stores information which includes a time offset, frame index number, time slot of the transmitted PSC, received power, and time of arrival relative to the UE (See Fig. 7, Col. 15, lines 12-17).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over US patent No. 6,363,060 ("Sarkar") in view of US patent No. 6,246,673 ("Tiedemann et al.").

Regarding Claim 35, Sarkar further teaches that the UE extracts the identified base station information including a time offset and time slot of the identified base stations (See Fig. 5, step 156, Col. 11, lines 29-34).

Sarkar teaches substantially all the claimed invention but did not disclose expressly the particular application involving limitations of

“calculating a time of arrival (TOA) for each of said adjusted PSC's frame timing; and adjusting a timing of said base station in response to said TOAs”.

Tiedemann et al. teach a method and system for handoff between an asynchronous CDMA base station and a synchronous CDMA base station for estimating (calculating) a arrival time (time of arrival, TOA) for each of said adjusted PSC's frame timing and deskewing (adjusting) a timing of said base station in response to said TOAs (See Fig. 3, Col. 11, lines 12-29).

A person of ordinary skill in the art would have been motivated to employ Tiedemann et al. in Sarkar in order to obtain a user equipment (UE) and method capable of conducting cell search in a wireless communication system and to take advantage of calculating a time of arrival (TOA) for each of said adjusted PSC's frame timing and adjusting a timing of said base station in response to said TOAs in claim 35.

The suggestion/motivation to do so would have been to estimate an arrival time for each of said adjusted PSC's frame timing and to adjust a timing of said base station in response to said arrival time (See Fig. 3, Col. 11, lines 12-29). At the time the invention was made, therefore, it would have been obvious to one of ordinary skill in the art to which the invention pertains to combine Tiedemann et al. with Sarkar to obtain the inventions specified in claim 35.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard Chang whose telephone number is (571) 272-3129. The examiner can normally be reached on Monday - Friday from 8 AM to 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on (571) 272-3139. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

rk
rk

Richard Chang
Patent Examiner
Art Unit 2663

Ricky Ngo
RICKY NGO
PATENT EXAMINER

3/7/05